

Notice of Allowability

Application No.

10/761,116

Examiner

Michael A. Lyons

Applicant(s)

LEE ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Amendment filed 06 July 2004.
2. ☒ The allowed claim(s) is/are 2-9 and 11-22.
3. ☒ The drawings filed on 20 January 2004 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

GREGORY J. GATLEY, JR.
PRIMARY EXAMINER

EXAMINER'S AMENDMENT AND STATEMENT OF REASONS FOR ALLOWANCE

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Jiawei Huang on September 23, 2004.

The application has been amended as follows:

Claims 1 and 10 are cancelled.

Claims 2-8 are made independent and amended as follows:

Claim 2: A multi-function opto-electronic detection apparatus for detecting molecular characteristics of a test sample comprising:

- a detecting light source subsystem generating sampling beams for illuminating said test sample;

- a manipulation optics subsystem aligning said sampling beam onto said test sample;

- a target signal processing subsystem analyzing target beams emerging from said test sample resulting from said illuminating of said sampling beam; and

- a sample fixation subsystem holding said test sample; wherein

- said detecting light source subsystem, manipulation optics subsystem and target signal processing subsystem being assembled into an ellipsometer for detecting ellipsometric characteristics of said test sample.

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Claim 3: A multi-function opto-electronic detection apparatus for detecting molecular characteristics of a test sample comprising:

a detecting light source subsystem generating sampling beams for illuminating said test sample;

a manipulation optics subsystem aligning said sampling beam onto said test sample;

a target signal processing subsystem analyzing target beams emerging from said test sample resulting from said illuminating of said sampling beam; and

a sample fixation subsystem holding said test sample; wherein

said detecting light source subsystem, manipulation optics subsystem and target signal processing subsystem being assembled into a confocal scanner for detecting an image of said test sample.

Claim 4: A multi-function opto-electronic detection apparatus for detecting molecular characteristics of a test sample comprising:

a detecting light source subsystem generating sampling beams for illuminating said test sample;

a manipulation optics subsystem aligning said sampling beam onto said test sample;

a target signal processing subsystem analyzing target beams emerging from said test sample resulting from said illuminating of said sampling beam; and

a sample fixation subsystem holding said test sample; wherein

said detecting light source subsystem, manipulation optics subsystem and target signal processing subsystem being assembled into a surface plasma resonance machine for detecting surface plasma resonance characteristics of said test sample.

Claim 5: A multi-function opto-electronic detection apparatus for detecting molecular characteristics of a test sample comprising:

a detecting light source subsystem generating sampling beams for illuminating said test sample;

a manipulation optics subsystem aligning said sampling beam onto said test sample;

a target signal processing subsystem analyzing target beams emerging from said test sample resulting from said illuminating of said sampling beam; and

a sample fixation subsystem holding said test sample; wherein

said detecting light source subsystem, manipulation optics subsystem and target signal processing subsystem being assembled into a photon tunneling scanning microscope for observing characteristics of said test sample.

Claim 6: A multi-function opto-electronic detection apparatus for detecting molecular characteristics of a test sample comprising:

a detecting light source subsystem generating sampling beams for illuminating said test sample;

a manipulation optics subsystem aligning said sampling beam onto said test sample;

a target signal processing subsystem analyzing target beams emerging from said test sample resulting from said illuminating of said sampling beam; and

a sample fixation subsystem holding said test sample; wherein

said detecting light source subsystem, manipulation optics subsystem and target signal processing subsystem being assembled into an interferometer for detecting phase interferometric characteristics of said test sample.

Claim 7: A multi-function opto-electronic detection apparatus for detecting molecular characteristics of a test sample comprising:

- a detecting light source subsystem generating sampling beams for illuminating said test sample;

- a manipulation optics subsystem aligning said sampling beam onto said test sample;

- a target signal processing subsystem analyzing target beams emerging from said test sample resulting from said illuminating of said sampling beam; and

- a sample fixation subsystem holding said test sample; wherein

said detecting light source subsystem, manipulation optics subsystem and target signal processing subsystem being assembled into an interferometer for detecting optical coherence tomographic characteristics of said test sample.

Claim 8: A multi-function opto-electronic detection apparatus for detecting molecular characteristics of a test sample comprising:

- a detecting light source subsystem generating sampling beams for illuminating said test sample;

- a manipulation optics subsystem aligning said sampling beam onto said test sample;

- a target signal processing subsystem analyzing target beams emerging from said test sample resulting from said illuminating of said sampling beam; and

- a sample fixation subsystem holding said test sample; wherein

said detecting light source subsystem, manipulation optics subsystem and target signal processing subsystem being assembled into a Doppler interferometer for detecting characteristics of said test sample.

Allowable Subject Matter

Claims 2-9 and 11-22 are allowed in view of the prior art.

The following is an examiner's statement of reasons for allowance:

As for claims 2-9, 11, and 12, the prior art of record, taken either alone or in combination, fails to disclose or render obvious a multi-function opto-electronic detection apparatus for detecting various bio-related characteristics of a test sample, in combination with the rest of the limitations of the above claims.

With further regards to claims 2-8 as amended via examiner's amendment, US Pat. 5,973,778 to Hunt discloses a method and apparatus measuring the molecular characteristics of a thin film; however, Hunt fails to disclose the specific embodiments and specific measurements generated by those embodiments.

With further regard to claims 9, 11, and 12, prior art such as US Pat. 6,590,667, disclose similar apparati to the claims in the instant application. However, these claims fail to disclose using these apparati for measuring the molecular characteristics of the test sample, in combination with the other elements and limitations of the claims.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

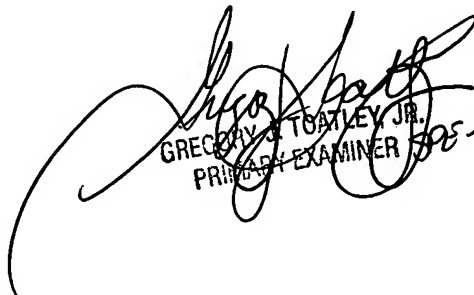
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael A. Lyons whose telephone number is 571-272-2420. The examiner can normally be reached on Monday through Friday.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J Toatley can be reached on 571-272-2800 ext. 77. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MAL
September 23, 2004


GREGORY J. TOATLEY, JR.
PRIMARY EXAMINER 582-2877